

REMARKS

Applicant intends this response to be a complete response to the Examiner's **11 March 2005** Non-Final Office Action. Applicant has labeled the paragraphs in his response to correspond to the paragraph labeling in the Office Action for the convenience of the Examiner.

Drawings

Applicant is submiting new drawings conforming with the drawing rules.

Rejections Under 35 U.S.C. §112, ¶2

Claims 2, 3, 9, 11 and 13-19 stand rejected under 35 U.S.C. § 112, ¶2. Applicant traverses and respectfully requests reconsideration based on the above claim amendments, if any, and the remarks presented herein.

Claim 2. Applicant has been amended to correct the "nitrogen removal system" to the "UV interference reduction system." The change is to correct a typographical error and does not narrow the term. Applicant, therefore, respectfully requests withdrawal of this section 112, ¶2 rejection.

Claim 3. Applicant is unable to determine the problem with claim 3 as there is no reference to an oxidizing zone in the claims. Applicant, therefore, respectfully requests withdrawal of this section 112, ¶2 rejection.

Claim 9. Applicant has amended the claim to conform with the specification as shown in Figure 2. The amendments are not narrowing because the claim adds the nitrogen removal system that is designed to remove trace amount of nitrogen from the oxidizing agent before it is introduced into the combustion chamber. Applicant, therefore, respectfully requests withdrawal of this section 112, ¶2 rejection.

Claim 11. Applicant has canceled claims 11 and 12 and combined them into new claim 21 so that the method is designed to improve detection of sulfur via UV fluorescence. Applicant, therefore, respectfully requests withdrawal of this section 112, ¶2 rejection.

Applicant has made other minor corrections to the claims. These corrections are intended to make the claim conform to the specification and do not narrow the claims or their terms.

Rejections Under 35 U.S.C. §102

Claims 1-2, 6-8, 10-14, 17 and 19-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wreyford (US5152963). Applicant traverses and respectfully requests reconsideration based on the above claim amendments, if any, and the remarks presented herein.

Applicant notes that Wreyford does relate generally to sulfur and/or nitrogen detection, but where the nitrogen is chemically bound nitrogen. Wreyford at Col. 3, ll. 4-21. Wreyford does not

disclose detection of sulfur below 100 ppd or 0.1 ppm. Wreyford at Col. 1, ll. 44-50. Wreyford also did not believe that nitrogen gas caused any problems with detection of sulfur:

Free nitrogen typically is not included in the sample. That is, atmospheric nitrogen is so nearly inert that combination [combustion] occurs at only extraordinarily high temperatures, those temperatures [are] above the range mentioned above. It is therefore desirable to operate the combustion means at a temperature sufficiently high to combust all the sulfur, and all the nitrogen in compound form. The temperature is kept low enough that free nitrogen, typically atmospheric nitrogen, is not combusted.

Wreyford at Col. 3, ll. 7-16.

In fact, in the absence of RN (analytes that contain bound nitrogen), Wreyford does not pass the sample through the ozone chamber:

If one is certain that the sample includes only nitrogen or sulfur but not both, then the equipment not needed can simply be turned off. In that instance, the valve 24 can be conveniently switched to deliver the sample to the first of interest for performing only that test.

Wreyford at Co. 6, ll. 4-9.

Moreover, Wreyford stated that detection of sulfur was not affected if NO was analyzed by ozone induced chemiluminescence prior to sulfur analysis. Wreyford at Col. 5, l. 45 to Col. 6, l. 3.

Because Wreyford does not disclose sulfur detection to less than about 0.5 ppm (500 ppb) and because Wreyford only uses the ozone generator when RN or RNS components are present in the sample and because Wreyford specifically states that nitrogen gas is inert and does not oxidize, Wreyford cannot anticipate the present claims. Applicant, therefore, respectfully requests withdrawal of this section 103(a) rejection.

Rejections Under 35 U.S.C. §103

Claims 3-5, 9, 15-16 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wreyford. Applicant traverses and respectfully requests reconsideration based on the above claim amendments, if any, and the remarks presented herein.

Applicant repeats all the discussions concerning Wreyford here. It is clear, that Wreyford teach directly away from the claims of present invention. Wreyford states to that nitrogen gas is not oxidized in the Wreyford apparatus. Moreover, the problem with detecting sulfur in the sub 100 ppb range has plagued the industry for a very long time and no solutions have been proposed until now because no one understood what was causing the problem, *i.e.*, the oxidation of trace nitrogen gas in analyte streams that do not include bound nitrogen. Applicant, therefore, respectfully requests withdrawal of this section 103(a) rejection.

New Claims

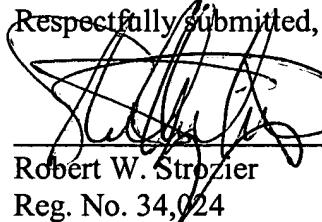
Wreyford does not anticipate or render obvious the new claims, because Wreyford does not disclose measuring sulfur in the low ppb levels and Wreyford does not disclose adjusting the ozone concentration to minimize nitrogen oxide interference and ozone interference.

Having fully responded to the Examiner's Non-Final Office Action, Applicant respectfully urges that this application be passed onto allowance.

If it would be of assistance in resolving any issues in this application, the Examiner is kindly invited to contact applicant's attorney Robert W. Strozier at 713.977.7000

Date: August 3, 2005

Respectfully submitted,


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